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CMS Project Title: **Enhancement of a Network Analysis Tool to Accommodate
Multiple Construction Work Zone Analysis (Initial Investigation)**

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ABSTRACT

A major issue in transportation projects is capacity reduction due to lane closures. Calculating capacity for a specific project can be done using information from the Highway Capacity Manual, but how often should a lane closure be expected is still not well studied. In this preliminary research project, we present the percentages that a lane closure can be expected in highway resurfacing projects and in major bridge projects, such as replacement and structural improvements. These values, combined with the capacity of the highway segment and the traffic demand can show us if during construction there will be traffic delays. Further research needs to be made to validate and expand this study.

EXECUTIVE SUMMARY

The objective of this project is to assess the feasibility of developing an analysis tool that will assist transportation planners in performing analyses of the impact of planned highway construction projects on regional highway networks. Calculating capacity for a specific project can be done using from the Highway Capacity Manual, but how often should a lane closure be expected is still not well studied. The ability to analyze multiple construction projects within a region will significantly improve congestion management capabilities.

Data on highway lane closures for a period for one year was obtained from the Florida Department of Transportation District 2 Information Office. The projects were broken into three categories, lane resurfacing, bridge repair and ramp resurfacing. For each project, the traffic movements were identified and all traffic closures were recorded. Two closure options were available per movement, totally closed and detoured, or single lane closed; while three time periods were available for closures, closed indefinitely, closed daily, and closed nightly. This created six unique closure possibilities for each movement.

From this information we calculated the probability that a closure will occur on any given day on a highway construction project. For example a state road resurfacing project requires that the road being resurfaced have a single lane closed either daily or nightly in each direction of travel for 41% to 62% of the project duration with an average of 53% and a standard deviation of 8.1%. In the case of major bridge work, the average value for a lane closure is 68.4% of the project's duration with a standard deviation of 13.7%. The initial results from ramp closures did not lend themselves well to this analysis method. This is a preliminary study and a more in depth analysis is needed to validate these results.

Knowing the amount of time we can expect a closure for a given project type can help us to understand what type of congestion, if any will be caused by it, and what type of advisory to the public is needed. Based on current traffic counts of roadway demand and Highway Capacity Manual methods for predicting capacity reductions it is possible to predict the severity of traffic impacts from closures. This, combined with our expected closure probabilities makes it possible to predict these impacts on any given day. This can be expanded to multiple projects within a localized highway network. For example if two projects, X and Y, are in the same network and we know that there is a 50% probability of a single lane closure on project X for any given day, and a 6% probability of a bridge closure on project Y for any given day then the probability of a traffic impact is 56%. Furthermore, we can predict a 3% chance of closures on both projects and the resulting traffic impacts.

From this research it is possible and we recommend constructing a continuous probability curve based upon multiple overlapping probabilities that can predict the probability of a traffic impact and the capacity reduction caused by construction in the network on any particular day. This would allow the designer to identify when, where and how likely impacts are to occur. This type of analysis lends itself particularly well to analysis by computer software and simulation.

CHAPTER 1 BACKGROUND

SUMMARY OF PROBLEM

Roadway construction and maintenance is unavoidable if we are to provide the best possible transportation infrastructure. However, these activities which appear to be on-going, can contribute to non-recurring congestion. Transportation planners recognize highway construction projects as a source of congestion and to the extent possible include estimates of construction congestion in planning forecast. However there are significant limitations to current practice. First, rather than a single project, multiple projects typically exist simultaneously within a geographic area. The traffic impacts of multiple projects may not be independent. Secondly, coarse categorization of construction projects does not permit identification of important project characterization significantly effecting congestion. Highway construction projects are generally performed in a series of phases in accordance with the project Traffic Control Plan. Therefore the impact on congestion is dependent upon the specific project construction/TCP phase underway.

In order to manage the renewal of our transportation infrastructure, it is essential that transportation planners and engineers have tools by which they can analyze the impact of multiple construction projects in a geographic region. Currently no analysis tools exist for adequately analyzing the impact multiple highway construction projects. Transportation planners have some flexibility with regard to the sequencing construction projects. The potential for mitigating construction congestion exists with improved analysis tools. Current state of the art modeling tools do not adequately address these issues.

RESEARCH OBJECTIVES AND SCOPE

The objective of this project is to assess the feasibility of developing an analysis tool that will assist transportation planners in performing analyses of the impact of planned highway construction projects on regional highway networks. The ability to analyze multiple construction projects within a region will significantly improve congestion management capabilities. This expected research outcome supports the goal of congestion mitigation at the local, state and national levels.

Task 2 - Develop basic construction/TCP modeling logic for the most common construction project types

DOTs typically classify projects using standard project type codes. For example the FDOT assigns each type of project a work mix code. Given the project type code and the planned duration, construction/TCP phases can be modeled and the resulting traffic impacts over the life of the project can be modeled. The first step in this task will be to develop a short list of the most common project types to be modeled. This will be accomplished by performing an analysis of the FDOT's project statistics. The project types will be selected based upon frequency and the potential impact on transportation capacity. Our preliminary thinking is that a manageable list would be limited to not more than 10 project types for the purposes of this study.

The research team will determine a representative MOT phasing for each project type. This will be developed in consultation with FDOT and consultant MOT design engineers, and construction managers. We expect to review MOT phasing and construction schedules on several projects for each project type. Given the project MOT phasing, project location and roadway, estimates of project impacts on capacity will be developed. To the extent possible we will utilize existing guidelines/method/algorithms for determining the effects of work zones on roadway capacity. The result of task 2 is expected to be a matrix and flowchart graphical representation of the logic.

Task 5- Prepare and Submit Final Report

The research team will prepare and submit for review and approval a Final Report fully documenting the research effort. The report will be with the intended reader in mind. The report format and organization will adhere to the required CMS standards. The services of a technical editor will be used to insure editorial quality. The report will be useful to organizations that desire to improve planning and management of construction related highway congestion.

Original Scope

In order to manage the renewal of our transportation infrastructure, it is essential that transportation planners and engineers have tools by which they can analyze the impact of multiple construction projects in a geographic region. Currently no analysis tools exist for adequately analyzing the impact multiple highway construction projects. Transportation planners have some flexibility with regard to the sequencing construction projects. The potential for mitigating construction congestion exists with improved analysis tools. Current state of the art modeling tools do not adequately address these issues. The objective of this project is to develop a highway network analysis tool that is capable of accounting for the effects of multiple construction projects throughout the network, each with varying durations and phasing plans.

The project will review current software applications to determine which provides the best opportunity for this development. Those to be preliminarily considered include Cube Voyager and XXE. XXE is a software application previously developed by Drs. Washburn and Fred Mannering. An evaluation of the merits of each application will be conducted to determine which of the two, or a combination, offers the best opportunity for enhancement. The research team will expand the selected application to permit the inclusion of work zones within the network. The mathematical programming will be revised to accommodate the desired program enhancements, including user interfaces. Additional refinements will allow work zones to be characterized with regard to traffic impacts resulting from the construction activity and Traffic Control Plan (TCP) phase. Given the project type and the planned duration, construction/TCP phases can be modeled and the resulting traffic impacts over the life of the project can be analyzed.

The expected final result of this project is an analysis tool, in a software program format, that is capable of accounting for the impacts of multiple construction work zones on regional highway networks, in terms of standard highway network performance measures, such as vehicle/person-miles traveled, vehicle/person-hours traveled, delay, etc. Such a capability will be the first of its kind and will allow for performing an analysis of the impact of planned highway construction projects on regional highway networks.

Revised Scope

Initial external reviews of the original proposal expressed support for the project goals and for the software development activities. However, there was some concern with regard to the feasibility of developing the construction/TCP modeling logic for the most common construction project types (Task 2). After a careful review of the review comments and the preliminary literature review, the project PIs now propose to undertake Task 2 as the scope this initial development project. If Task 2 can be successfully developed, hopefully support for the entire project can be obtained.

The expected result of the revised scope are a list of more frequent FDOT projects and a preliminary study on frequency of lane closure of some of these types of highway projects.

CHAPTER 2
RESEARCH APPROACH

LITERATURE REVIEW

Through literature review, we have identified characteristics of different work zone configurations, i.e. partial lane closures, crossovers, and temporary closures, as well as different work schedules, i.e. weekend work, night work, day work. We have also identified the most common transportation project as shown in table 2-1 (1):

Table 2-1. Most common transportation projects

WMC	Description
0002	New road construction
0005	Flexible pavement reconstruction
0012	Resurfacing
0121	Multilane reconstruction
0213	Add lanes & reconstruction
0217	Rigid pavement reconstruction
0218	Add lanes & rehabilitate pavement
0221	Widen/Resurface existing lanes

The measurements taken by other researchers are for the most part the following: speed, before, during and after the work zone, queue length and volume data (2, 3, and 4). Other authors have taken into account work intensity, weather, and familiarity of users (5).

Another important aspect is how well informed are the users (7). In a six lane, 50 year old, 26.3 km segment of I-70 near Long Beach, CA being rebuilt with long-life asphalt concrete, major congestion was avoided by informing users. The work was performed during the weekend and the public was informed through different methods of potential delays. The authors reported a 39% reduction in average demand and as the project advance, traffic demand increased but no congestion was observed. As a comparison, a project on I-65 in Indiana (8) required traffic to be stopped to place bridge beams for a new overpass and there were no announcement made or signs posted on the highway. The authors of this study reported delays of up to 31.2 minutes and queue lengths of up to 3.1 miles. This project was also done during weekdays.

The common factors found in the literature to calculate work zones capacity are:

1. Speed before, during and after work zone
2. Entrance and exit ramps volume
3. Number of lanes closed vs. number of total lanes

4. Crossover lanes
5. Time of day of work performed
6. Weekday vs. weekend
7. Original traffic capacity
8. Queue length
9. Type of work performed

Other factors that we have identified through literature review are short-term work zones (9, 10) and how they affect the capacity. Data was classified based upon the total number of lanes and how many were closed during construction working hours. Other items considered are ramps within the working zone, entrance and exits ramps, and other factors already considered in our study.

Other studies from different states such as Texas (9), Iowa (11) and North Carolina (12) can help us identify commonalities and differences that arise from work zones in different locations. Furthermore, the locations not only refer to different states but also differences between rural and urban areas (13). The effects of these locations will be further discussed in the final report.

When to reduce capacity in work zones

Per the Highway Capacity Manual (15), capacity is calculated per lane and then added up to calculate the total capacity of the highway segment. Capacity for normal work conditions is 1,600 vehicles per hour, per lane. Downstream on-ramps traffic is deducted from the calculated capacity to account for entering traffic while traffic entering on ramps located 1,500 ft or more upstream of the work zone is not included when calculating capacity.

The capacity per lane in the work zone is not affected during non-working hours (13). Furthermore, the capacity of the lanes that are not adjacent to the work area is not affected. For lanes not adjacent to the work zone and for non-working hours, the capacity can be assumed to be the normal capacity of the segment when there is no construction present.

When to expect lane closures

First we need to differentiate between partial closure and crossover. Partial closure is when one lane is closed in one direction and no disruption is caused in the other direction; crossover is when one direction of travel is completely closed and the traffic is diverted to use lanes in the opposing direction of travel(4).

Our preliminary literature review of highway projects lane closures, crossovers and detours, found that lane closures occur about 30% of the time when rebuilding or replacing concrete pavement (14).

The following data was obtained from the Ohio Department of Transportation (16):

- During bridge replacements project detours occur about 35% of the time throughout the duration of the project.
- Bridge closures for repair occur about 57% of the total construction time.

- Rehabilitation projects have a 20% of closure time during the total construction time.

Data Collection

Different projects require different analysis of capacity reduction depending on lane closures, detours, type of projects, length of the project, etc. We have studied data for resurfacing projects that required lane closures at some point during the project duration to determine a generalized formula that can provide a better prediction of when to expect that a lane closure may occur on this type of project.

Data was obtained from the Florida Department of Transportation District 2 Information Office. The data consisted of weekly public notices on road and lane closures listed by project in the Jacksonville area. A one year period was observed from June 13, 2009 to June 12, 2010(17). Some projects have less than a 365 day observation period because the project was either completed before the observation period ended, or the project began after the start of the observation period. Table 2-2 shows District 2 projects used for this study.

Table 2-2. Florida District 2 highway projects

Project Name	Observed Period (days)
I-10 resurfacing and widening project between Lane Ave. and Hallsema Rd.	365
Branan Field Chaffe Road, SR 23 Extension between I-10 and 103 St.	99
I-95/SR 9A East interchange reconstruction near JIA	365
J. Turner Butler Blvd widening between Kernan Blvd. and San Pablo Rd.	307
SR 9A/Heckschuer Dr. interchange	160
SR A1A resurfacing project between 9th Ave N and Duvall/St. Johns County line	192
Atlantic Blvd/ SR A1A resurfacing from Mayport Rd. to 9th Ave.	192
SR A1A resurfacing from Mayport Rd. to Ferry Landing	173
SR A1A traffic signal improvement from 7th St. to NAS airport	97
US 17/Doctors Inlet bridge widening	365
US 17th resurfacing between CR 220 and Creighton Rd.	180
I-95 interchange modification at CR 210	311
Black Creek Bridge replacement on SR 21 in Middleburgh	341
Broward Bridge repainting project	118
Heart Bridge repainting and structural repair	365
I-10 pavement improvements between Stockton St. and Lane Ave.	328

**CHAPTER 3
FINDINGS AND APPLICATIONS**

For each project, the traffic movements were identified and all traffic movement closures were recorded. Two closure options were available per movement, totally closed and detoured, or single lane closed; while three time periods were available for closures, closed indefinitely, closed daily, and closed nightly. This created six unique closure possibilities for each movement.

The number of days a particular closure type occurred was totaled for each traffic movement in each project. Based on the total number of days a particular closure occurred and the 365 day observation period it was possible to calculate the percentage of days that the closure occurred. For example a state road resurfacing project requires that the road being resurfaced have a single lane closed either daily or nightly in each direction of travel for 41% to 62% of the project duration.

RESURFACING PROJECTS

For this report, we have narrowed down the closures to single lane closures either during the day or night in resurfacing projects. From the data collected table 3-1 shows the projects that are part of our study:

Table 3-1. Resurfacing projects lane closure data

	Total Days	single lane closed daily		single lane closed nightly		single lanes may be closed nightly	
		Days	%	Days	%	Days	%
I-10 Resurfacing and Widening Project between Lane Ave. and Hallsema Rd.							
I-10 both directions various locations	365	0	0.0%	0	0.0%	226	61.9%
Chaffe road both directions	365	0	0.0%	21	5.8%	130	35.6%
SRA1A Resurfacing Project between 9th Ave N and Duvall/St.Johns County line							
NB	192	0	0.0%	116	60.4%	0	0.0%
SB	192	0	0.0%	108	56.3%	0	0.0%
Atlantic Blvd/ A1A Resurfacing from Mayport rd to 9th Ave							
NB	192	65	33.9%	26	13.5%	0	0.0%
SB	192	65	33.9%	26	13.5%	0	0.0%
SR A1A Resurfacing from Mayport rd to Ferry Landing							
Total Days		Days	%	Days	%	Days	%

NB	173	78	45.1%	20	11.6%	0	0.0%
SB	173	77	44.5%	21	12.1%	0	0.0%

Table 3-2 summarizes the values obtained when calculating the total percentage of closures:

Table 3-2. Resurfacing projects percentage of lane closure

I-10 Resurfacing and Widening Project between Lane Ave. and Hallsema Rd.		Total % of lane closure
	I-10 both directions	61.9%
	Chaffe Rd both directions	41.4%
SR A1A Resurfacing Project between 9th Ave N and Duvall/St. Johns County line		Total % of lane closure
	NB	60.4%
	SB	56.3%
Atlantic Blvd/ A1A Resurfacing from Mayport Rd to 9th Ave		Total % of lane closure
	NB	47.4%
	SB	47.4%
SR A1A Resurfacing from Mayport Rd to Ferry Landing		Total % of lane closure
	NB	56.6%
	SB	56.6%

If we average these values we obtain 53.1% of the time there will be a lane closure with a standard deviation of 8.1%. This value needs to be further analyzed using data from more projects, preferably from different DOTs around the country.

Most of these closures occurred at night with only one project, SR A1A Resurfacing from Mayport Rd to Ferry Landing, having the majority of closures occurring during the day. Only one project, SR A1A Resurfacing Project between 9th Ave N and Duvall/St. Johns County line, shows a difference in frequency of closures based on direction of travel. All other projects were closed an equal amount of time in both directions of travel even though the closures did not necessarily occur at the same time.

BRIDGE PROJECTS

For the year 2009, table 3-3 summarizes three bridge projects that, due to the complexity of the work, had nightly or daily closures. These are:

Table 3-3. Bridge projects lane closures

			Single lane closed daily		single lane closed nightly	
		Total Days	Days	%	Days	%
US 17/Doctors inlet bridge widening						
	NB	365	0	0.0%	281	77.0%
	SB	365	0	0.0%	329	90.1%
Black Creek Bridge replacement on SR21 in Middleburgh		Total Days	Days	%	Days	%
	NB	341	0	0.0%	200	58.7%
	SB	341	0	0.0%	175	51.3%
Heart Bridge Repainting and Structural Repair		Total Days	Days	%	Days	%
	NB	365	244	66.8%	0	0.0%
	SB	365	243	66.6%	0	0.0%

In the case of major bridge work, the average value for closure of a lane is 68.4% of the project’s duration with a standard deviation of 13.7%. As with the resurfacing data, a more in depth analysis is needed to validate these results.

USE OF DATA

Knowing the amount of time we can expect a closed lane in a resurfacing project can help us to understand what type of congestion, if any will be cause by it, and what type of advisory to the public is needed. DOTs conduct traffic counts prior to the start of a project to obtain the current roadway demand. This data combined with the capacity of the roadway, 1,600 veh/hr/lane, can assist us in predicting congestion due to the closure of a lane. This is achieved by calculating the new expected capacity after the lane is closed and comparing it to the expected traffic count made by the DOT. Furthermore, now that we know the probability of a road closure during a resurfacing project from based upon the data collected in this research, we can estimate the expected effect the closure will have in the regular traffic of the area. For example, if we have a two lane road that is to be resurfaced in both directions, with a non-construction capacity of 3,200 veh/hr and one lane is to be closed, the capacity of the open lane is reduced about 15% from its previous capacity of 1,600 veh/hr to 1,360 veh/hr. This combined with the other lane being closed lowers the total capacity of the road form 3,200 veh/hr to 1,360 veh/per If the traffic count for this road is of 1,400 veh/hr, we have created a congestion problem in an area that previously did not have a congestion problem. This problem has a roughly 53% chance of impacting traffic on any given day during the project duration.

CHAPTER 4 CONCLUSIONS, RECOMMENDATIONS AND SUGGESTED RESEARCH

CONCLUSIONS

This research investigated the feasibility of predicting and modeling traffic impacts caused by multiple roadway construction projects on a localized roadway network. It was hypothesized that by knowing the quantity, type and duration of construction projects in a network, that it is possible to predict the probability of a traffic impact. Our research has shown that this is a feasible method.

The data was broken into 3 categories, ramps, bridges and lanes; lane data showed the most consistency within the data collected. On average, lane closures were needed for 53.1% of a project duration, with a standard deviation of 8.1%. This method also worked well for bridges but was not as consistent in the data collected as lane closures; bridges had a 68.4% probability of a lane closure with a 13% standard deviation. This method did not work well for individual ramps closures. Using a method based on total days appeared to be more appropriate with individual ramp closures; however, it may be possible to calculate ramp closures for the entire project based on probabilities and project duration.

For any given project it is therefore possible to predict the probability of each type of closure on any given day. This can be expanded to multiple projects all within a local network. For example if two projects, X and Y, are in the same network and we know that there is a 50% probability of a single lane closure on project X for any given day, and a 6% probability of a bridge closure on project Y for any given day then the probability of a traffic impact is 56%. Furthermore, we can predict a 3% chance of closures on both projects and the resulting traffic impacts. It is possible to construct a continuous probability curve based upon multiple overlapping probabilities that can predict the probability of a traffic impact caused by construction in the network on any particular day.

This methodology can be further be developed to predict the impact and severity of a traffic impact in addition to the mere likely hood of an impact occurring. Based on the architecture of the roadway and the Highway Capacity Manual it is possible to predict the reduction in capacity for each particular closure type. Knowing the actual traffic counts from each project roadway allows the actual traffic to be compared to the capacity in the event of an impact. This would allow the designer to identify when, where and how likely impacts are to occur. This type of analysis lends itself particularly well to analysis by computer software and simulation.

RECOMENDATIONS

It is recommended that more data be gathered to create a data set large enough to provide reliable confidence intervals for the probability of each closure type based on project. Next a computer model should be formulated to predict traffic impacts based on the probability of a closure, roadway architecture and Highway Capacity Manual methods. This computer model should be tested and validated based upon actual traffic impacts to a roadway network during construction.

FUTURE RESEARCH

Research is needed to identify what types of projects are the best candidates to model using this method. Future research is also needed to identify real world complications that alter the results of the computer model.

LIST OF REFERENCES

- [1] Ellis, R.E., C. Glagola and A. Agdas. Comparative Analyses of Change Orders Costs in Transportation Construction. In *AAACE International 54th Annual Meeting*, Atlanta, GA, June 27-30, 2010.
- [2] Chen, C. and P. Schonfeld. Work Zone Lengths for a Four-Lane Road with an Alternate Route. In *Journal of Transportation Engineering*, vol. 131, 2005, p. 780.
- [3] Garcia, C., R. Huebschman, D.M. Abraham, and D.M. Bullock. Using GPS to Measure the Impact of Construction Activities on Rural Interstates. *Journal of Construction Engineering and Management*, vol. 132, 2006, p. 508.
- [4] Jiang Y. Traffic Capacity, Speed, and Queue-Discharge Rate of Indiana's Four-Lane Freeway Work Zones. *Transportation Research Record*, vol. 1657, 1999, pp. 10-17.
- [5] Kim T., D. Lovell and J. Paracha. A New Methodology to Estimate Capacity for Freeway work Zones. *Submitted to the 81st Annual Meeting of the Transportation Research Board*, January, 2001, Washington, D.C.
- [6] Chitturi M.V., R.F. Benekohal, and A. Kaja-Mohideen. Methodology for Computing Delay and User Costs in Work Zones. *Transportation Research Record: Journal of the Transportation Research Board*, vol. 2055, 2008, pp. 31-38.
- [7] Lee E., H. Lee, and J.T. Harvey. Fast-Track Urban Freeway Rehabilitation with 55-H Weekend Closures: I-710 Long Beach Case Study. *Journal of Construction Engineering and Management*, vol. 132, 2006, p. 465.
- [8] Lee C., D.A. Noyce, and X. Qin. Development of Traffic Delay Assessment Tool for Short-Term Closures on Urban Freeways. *Transportation Research Record: Journal of the Transportation Research Board*, vol. 2055, 2008, pp. 39-48.
- [9] Krames R.A., G.O. Lopez. Updated Capacity Values for Short-Term Freeway Work Zone Lane Closures. *Transportation Research Record: Journal of the Transportation Research Board*, vol. 1442, 2008, 1994, pp. 49-56.
- [10] Maze, T., S. Schrock, and A. Kamyab. Capacity of Freeway Work Zone Lane Closures. *Proceedings of the Mid-Continent Transportation Symposium, Iowa State University*, Ames, 2000.
- [11] Sarasua, W. A., W. J. Davis, D. B. Clarke, J. Kottapally, and P. Mulukutla, Evaluation of Interstate Highway Capacity for Short-Term Work Zone Lane Closures. *Transportation Research Record: Journal of the Transportation Research Board*, vol. 1877, Transportation Research Board, National Research Council, Washington, D.C., 2004, pp. 85-94.
- [12] Dixon, K.K., J.E. Hummer, and A.R. Lorscheider. Capacity for North Carolina Freeway Work Zones. *Transportation Research Record* 1529, Transportation Research Board, National Research Council, Washington, D.C., 1996, pp. 27-34.
- [13] Dudek, C.L., and S.H. Richards. Traffic Capacity Through urban Freeway Work Zones in Texas. *Transportation Research Record* 869, Transportation Research Board, National Research Council, Washington, D.C., 1982, pp. 14-18.
- [14] Lee E., H. Lee, and J.T. Harvey. Fast-Track Urban Freeway Rehabilitation with 55-H Weekend Closures: I-710 Long Beach Case Study. *Journal of Construction Engineering and Management*, vol. 132, 2006, p. 465.

- [15] Highway capacity manual 2000: transportation research board, Washington D.C.: Transport Research Board, 2000.
- [16] Ohio Department of Transportation: <http://www.dot.state.oh.us/Pages/Home.aspx>
- [17] Florida Department of Transportation: <http://www.dot.state.fl.us/>

APPENDIX A – CONSTRUCTION DELAYS DATA

BIRTH DATE/CHILD'S AGE AT ENTRY IN NORTHERN MARIANA ISLANDS		1999-2000 FISCAL YEAR ASSOCIATION USE - MONTHLY SUBSCRIPTIONS									
1-10 FEB Child	1-10 MAR Child	1-10 APR Child	1-10 MAY Child	1-10 JUN Child	1-10 JUL Child	1-10 AUG Child	1-10 SEP Child	1-10 OCT Child	1-10 NOV Child	1-10 DEC Child	1-10 JAN Child
Thursday, September 24, 2000											
Saturday, September 26, 2000											
Sunday, September 27, 2000											
Tuesday, September 29, 2000											
Wednesday, September 30, 2000											
Friday, October 02, 2000											
Saturday, October 04, 2000											
Monday, October 05, 2000											
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Thursday, November 19, 2000											
Friday, November 20, 2000											
Saturday, November 22, 2000											
Sunday, November 23, 2000											
Monday, November 24, 2000											
Tuesday, November 25, 2000											
Wednesday, November 26, 2000											
Thursday, November 27, 2000											
Friday, November 28, 2000											
Saturday, November 29, 2000											
Monday, November 30, 2000											
Tuesday, December 01, 2000											
Wednesday, December 02, 2000											
Thursday, December 03, 2000											
Friday, December 04, 2000											
Saturday, December 05, 2000											
Sunday, December 06, 2000											
Tuesday, December 08, 2000											
Wednesday, December 09, 2000											
Thursday, December 10, 2000											
Friday, December 11, 2000											
Saturday, December 12, 2000											
Monday, December 14, 2000											
Tuesday, December 15, 2000											
Wednesday, December 16, 2000											
Thursday, December 17, 2000											
Friday, December 18, 2000											
Saturday, December 19, 2000											
Monday, December 21, 2000											
Tuesday, December 22, 2000											
Wednesday, December 23, 2000											
Thursday, December 24, 2000											
Friday, December 26, 2000											
Saturday, December 27, 2000											
Sunday, December 28, 2000											
Monday, December 29, 2000											
Tuesday, December 30, 2000											
Wednesday, December 31, 2000											
Thursday, January 01, 2001											
Friday, January 02, 2001											
Saturday, January 03, 2001											
Monday, January 04, 2001											

Date	1. Turner table: and will be chosen as an MTD and in this Row		2. Turner table: and will be chosen as an MTD and in this Row		3. Turner table: and will be chosen as an MTD and in this Row		4. Turner table: and will be chosen as an MTD and in this Row	
	Turner table: and will be chosen as an MTD and in this Row	Turner table: and will be chosen as an MTD and in this Row	Turner table: and will be chosen as an MTD and in this Row	Turner table: and will be chosen as an MTD and in this Row	Turner table: and will be chosen as an MTD and in this Row	Turner table: and will be chosen as an MTD and in this Row	Turner table: and will be chosen as an MTD and in this Row	Turner table: and will be chosen as an MTD and in this Row
Thursday, September 24, 2009								
Friday, September 25, 2009								
Sunday, September 27, 2009								
Monday, September 28, 2009								
Tuesday, September 29, 2009								
Wednesday, September 30, 2009								
Thursday, October 1, 2009								
Friday, October 2, 2009								
Saturday, October 3, 2009								
Sunday, October 4, 2009								
Monday, October 5, 2009								
Tuesday, October 6, 2009								
Wednesday, October 7, 2009								
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Tuesday, November 4, 2009								
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Wednesday, December 3, 2009								
Thursday, December 4, 2009								
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Wednesday, December 24, 2009								
Thursday, December 25, 2009								
Friday, December 26, 2009								
Saturday, December 27, 2009								
Sunday, December 28, 2009								
Monday, December 29, 2009								
Tuesday, December 30, 2009								
Wednesday, December 31, 2009								
Thursday, December 31, 2009								
Friday, January 1, 2010								
Saturday, January 2, 2010								
Monday, January 4, 2010								
Monday, January 18, 2010								

Date	T. Turner Elder Blvd (Interchange) to I-75 (Interchange)				I-75 (Interchange) to I-20 (Interchange)			
	Wk	Turner Elder Blvd	I-75	I-20	Wk	Turner Elder Blvd	I-75	I-20
Thursday, January 09, 2019	9	9	9	9	9	9	9	9
Friday, January 10, 2019	9	9	9	9	9	9	9	9
Saturday, January 11, 2019	9	9	9	9	9	9	9	9
Sunday, January 12, 2019	9	9	9	9	9	9	9	9
Monday, January 13, 2019	9	9	9	9	9	9	9	9
Tuesday, January 14, 2019	9	9	9	9	9	9	9	9
Wednesday, January 15, 2019	9	9	9	9	9	9	9	9
Thursday, January 16, 2019	9	9	9	9	9	9	9	9
Friday, January 17, 2019	9	9	9	9	9	9	9	9
Saturday, January 18, 2019	9	9	9	9	9	9	9	9
Sunday, January 19, 2019	9	9	9	9	9	9	9	9
Monday, January 20, 2019	9	9	9	9	9	9	9	9
Tuesday, January 21, 2019	9	9	9	9	9	9	9	9
Wednesday, January 22, 2019	9	9	9	9	9	9	9	9
Thursday, January 23, 2019	9	9	9	9	9	9	9	9
Friday, January 24, 2019	9	9	9	9	9	9	9	9
Saturday, January 25, 2019	9	9	9	9	9	9	9	9
Sunday, January 26, 2019	9	9	9	9	9	9	9	9
Monday, January 27, 2019	9	9	9	9	9	9	9	9
Tuesday, January 28, 2019	9	9	9	9	9	9	9	9
Wednesday, January 29, 2019	9	9	9	9	9	9	9	9
Thursday, January 30, 2019	9	9	9	9	9	9	9	9
Friday, February 01, 2019	9	9	9	9	9	9	9	9
Saturday, February 02, 2019	9	9	9	9	9	9	9	9
Sunday, February 03, 2019	9	9	9	9	9	9	9	9
Monday, February 04, 2019	9	9	9	9	9	9	9	9
Tuesday, February 05, 2019	9	9	9	9	9	9	9	9
Wednesday, February 06, 2019	9	9	9	9	9	9	9	9
Thursday, February 07, 2019	9	9	9	9	9	9	9	9
Friday, February 08, 2019	9	9	9	9	9	9	9	9
Saturday, February 09, 2019	9	9	9	9	9	9	9	9
Sunday, February 10, 2019	9	9	9	9	9	9	9	9
Monday, February 11, 2019	9	9	9	9	9	9	9	9
Tuesday, February 12, 2019	9	9	9	9	9	9	9	9
Wednesday, February 13, 2019	9	9	9	9	9	9	9	9
Thursday, February 14, 2019	9	9	9	9	9	9	9	9
Friday, February 15, 2019	9	9	9	9	9	9	9	9
Saturday, February 16, 2019	9	9	9	9	9	9	9	9
Sunday, February 17, 2019	9	9	9	9	9	9	9	9
Monday, February 18, 2019	9	9	9	9	9	9	9	9
Tuesday, February 19, 2019	9	9	9	9	9	9	9	9
Wednesday, February 20, 2019	9	9	9	9	9	9	9	9
Thursday, February 21, 2019	9	9	9	9	9	9	9	9
Friday, February 22, 2019	9	9	9	9	9	9	9	9
Saturday, February 23, 2019	9	9	9	9	9	9	9	9
Sunday, February 24, 2019	9	9	9	9	9	9	9	9
Monday, February 25, 2019	9	9	9	9	9	9	9	9
Tuesday, February 26, 2019	9	9	9	9	9	9	9	9
Wednesday, February 27, 2019	9	9	9	9	9	9	9	9
Thursday, February 28, 2019	9	9	9	9	9	9	9	9
Friday, February 29, 2019	9	9	9	9	9	9	9	9
Saturday, March 01, 2019	9	9	9	9	9	9	9	9
Sunday, March 02, 2019	9	9	9	9	9	9	9	9
Monday, March 03, 2019	9	9	9	9	9	9	9	9
Tuesday, March 04, 2019	9	9	9	9	9	9	9	9
Wednesday, March 05, 2019	9	9	9	9	9	9	9	9
Thursday, March 06, 2019	9	9	9	9	9	9	9	9
Friday, March 07, 2019	9	9	9	9	9	9	9	9
Saturday, March 08, 2019	9	9	9	9	9	9	9	9
Sunday, March 09, 2019	9	9	9	9	9	9	9	9
Monday, March 10, 2019	9	9	9	9	9	9	9	9
Tuesday, March 11, 2019	9	9	9	9	9	9	9	9
Wednesday, March 12, 2019	9	9	9	9	9	9	9	9
Thursday, March 13, 2019	9	9	9	9	9	9	9	9
Friday, March 14, 2019	9	9	9	9	9	9	9	9
Saturday, March 15, 2019	9	9	9	9	9	9	9	9
Sunday, March 16, 2019	9	9	9	9	9	9	9	9
Monday, March 17, 2019	9	9	9	9	9	9	9	9
Tuesday, March 18, 2019	9	9	9	9	9	9	9	9
Wednesday, March 19, 2019	9	9	9	9	9	9	9	9
Thursday, March 20, 2019	9	9	9	9	9	9	9	9
Friday, March 21, 2019	9	9	9	9	9	9	9	9
Saturday, March 22, 2019	9	9	9	9	9	9	9	9
Sunday, March 23, 2019	9	9	9	9	9	9	9	9
Monday, March 24, 2019	9	9	9	9	9	9	9	9
Tuesday, March 25, 2019	9	9	9	9	9	9	9	9
Wednesday, March 26, 2019	9	9	9	9	9	9	9	9
Thursday, March 27, 2019	9	9	9	9	9	9	9	9
Friday, March 28, 2019	9	9	9	9	9	9	9	9
Saturday, March 29, 2019	9	9	9	9	9	9	9	9
Sunday, March 30, 2019	9	9	9	9	9	9	9	9
Monday, March 31, 2019	9	9	9	9	9	9	9	9

Date	I. Turnout Ballot Box				II. Turnout Ballot Box (S) Use Change				III. Turnout Ballot Box (S) Use Change			
	Wk	I. Turnout Ballot Box	II. Turnout Ballot Box	III. Turnout Ballot Box	Wk	I. Turnout Ballot Box	II. Turnout Ballot Box	III. Turnout Ballot Box	Wk	I. Turnout Ballot Box	II. Turnout Ballot Box	III. Turnout Ballot Box
Thursday, March 22, 2018		0	0	0		0	0	0		0	0	0
Friday, March 23, 2018		0	0	0		0	0	0		0	0	0
Thursday, March 25, 2018		0	0	0		0	0	0		0	0	0
Friday, March 26, 2018		0	0	0		0	0	0		0	0	0
Saturday, March 27, 2018		0	0	0		0	0	0		0	0	0
Sunday, March 28, 2018		0	0	0		0	0	0		0	0	0
Monday, March 29, 2018		0	0	0		0	0	0		0	0	0
Tuesday, March 30, 2018		0	0	0		0	0	0		0	0	0
Wednesday, March 31, 2018		0	0	0		0	0	0		0	0	0
Thursday, April 1, 2018		0	0	0		0	0	0		0	0	0
Friday, April 2, 2018		0	0	0		0	0	0		0	0	0
Saturday, April 3, 2018		0	0	0		0	0	0		0	0	0
Sunday, April 4, 2018		0	0	0		0	0	0		0	0	0
Monday, April 5, 2018		0	0	0		0	0	0		0	0	0
Tuesday, April 6, 2018		0	0	0		0	0	0		0	0	0
Wednesday, April 7, 2018		0	0	0		0	0	0		0	0	0
Thursday, April 8, 2018		0	0	0		0	0	0		0	0	0
Friday, April 9, 2018		0	0	0		0	0	0		0	0	0
Saturday, April 10, 2018		0	0	0		0	0	0		0	0	0
Sunday, April 11, 2018		0	0	0		0	0	0		0	0	0
Monday, April 12, 2018		0	0	0		0	0	0		0	0	0
Tuesday, April 13, 2018		0	0	0		0	0	0		0	0	0
Wednesday, April 14, 2018		0	0	0		0	0	0		0	0	0
Thursday, April 15, 2018		0	0	0		0	0	0		0	0	0
Friday, April 16, 2018		0	0	0		0	0	0		0	0	0
Saturday, April 17, 2018		0	0	0		0	0	0		0	0	0
Sunday, April 18, 2018		0	0	0		0	0	0		0	0	0
Monday, April 19, 2018		0	0	0		0	0	0		0	0	0
Tuesday, April 20, 2018		0	0	0		0	0	0		0	0	0
Wednesday, April 21, 2018		0	0	0		0	0	0		0	0	0
Thursday, April 22, 2018		0	0	0		0	0	0		0	0	0
Friday, April 23, 2018		0	0	0		0	0	0		0	0	0
Saturday, April 24, 2018		0	0	0		0	0	0		0	0	0
Sunday, April 25, 2018		0	0	0		0	0	0		0	0	0
Monday, April 26, 2018		0	0	0		0	0	0		0	0	0
Tuesday, April 27, 2018		0	0	0		0	0	0		0	0	0
Wednesday, April 28, 2018		0	0	0		0	0	0		0	0	0
Thursday, April 29, 2018		0	0	0		0	0	0		0	0	0
Friday, April 30, 2018		0	0	0		0	0	0		0	0	0
Saturday, May 1, 2018		0	0	0		0	0	0		0	0	0
Sunday, May 2, 2018		0	0	0		0	0	0		0	0	0
Monday, May 3, 2018		0	0	0		0	0	0		0	0	0
Tuesday, May 4, 2018		0	0	0		0	0	0		0	0	0
Wednesday, May 5, 2018		0	0	0		0	0	0		0	0	0
Thursday, May 6, 2018		0	0	0		0	0	0		0	0	0
Friday, May 7, 2018		0	0	0		0	0	0		0	0	0
Saturday, May 8, 2018		0	0	0		0	0	0		0	0	0
Sunday, May 9, 2018		0	0	0		0	0	0		0	0	0
Monday, May 10, 2018		0	0	0		0	0	0		0	0	0
Tuesday, May 11, 2018		0	0	0		0	0	0		0	0	0
Wednesday, May 12, 2018		0	0	0		0	0	0		0	0	0
Thursday, May 13, 2018		0	0	0		0	0	0		0	0	0
Friday, May 14, 2018		0	0	0		0	0	0		0	0	0
Saturday, May 15, 2018		0	0	0		0	0	0		0	0	0
Sunday, May 16, 2018		0	0	0		0	0	0		0	0	0
Monday, May 17, 2018		0	0	0		0	0	0		0	0	0
Tuesday, May 18, 2018		0	0	0		0	0	0		0	0	0
Wednesday, May 19, 2018		0	0	0		0	0	0		0	0	0
Thursday, May 20, 2018		0	0	0		0	0	0		0	0	0
Friday, May 21, 2018		0	0	0		0	0	0		0	0	0
Saturday, May 22, 2018		0	0	0		0	0	0		0	0	0
Sunday, May 23, 2018		0	0	0		0	0	0		0	0	0
Monday, May 24, 2018		0	0	0		0	0	0		0	0	0
Tuesday, May 25, 2018		0	0	0		0	0	0		0	0	0
Wednesday, May 26, 2018		0	0	0		0	0	0		0	0	0
Thursday, May 27, 2018		0	0	0		0	0	0		0	0	0
Friday, May 28, 2018		0	0	0		0	0	0		0	0	0
Saturday, May 29, 2018		0	0	0		0	0	0		0	0	0
Sunday, May 30, 2018		0	0	0		0	0	0		0	0	0
Monday, June 1, 2018		0	0	0		0	0	0		0	0	0
Tuesday, June 2, 2018		0	0	0		0	0	0		0	0	0
Wednesday, June 3, 2018		0	0	0		0	0	0		0	0	0
Thursday, June 4, 2018		0	0	0		0	0	0		0	0	0
Friday, June 5, 2018		0	0	0		0	0	0		0	0	0
Saturday, June 6, 2018		0	0	0		0	0	0		0	0	0
Sunday, June 7, 2018		0	0	0		0	0	0		0	0	0
Monday, June 8, 2018		0	0	0		0	0	0		0	0	0
Tuesday, June 9, 2018		0	0	0		0	0	0		0	0	0
Wednesday, June 10, 2018		0	0	0		0	0	0		0	0	0
Thursday, June 11, 2018		0	0	0		0	0	0		0	0	0
Friday, June 12, 2018		0	0	0		0	0	0		0	0	0
Saturday, June 13, 2018		0	0	0		0	0	0		0	0	0

Occure Type 1: totally closed-off road
 Occure Type 2: totally closed-off road, detoured
 Occure Type 3: single lane closed daily
 Occure Type 4: single lane closed daily and nightly
 Occure Type 5: single lanes being closed facility

Date	STATUS/REASON FOR IMPROVEMENT FROM 7/13		STATUS/REASON FOR IMPROVEMENT FROM 7/14		STATUS/REASON FOR IMPROVEMENT FROM 7/15		STATUS/REASON FOR IMPROVEMENT FROM 7/16		STATUS/REASON FOR IMPROVEMENT FROM 7/17	
	WORKS/STATION	HOW EARLY/IN AHEAD								
Sunday, June 11, 2009	b	1	b	1	b	1	b	1	b	1
Monday, June 15, 2009	b	1	b	1	b	1	b	1	b	1
Tuesday, June 16, 2009	b	1	b	1	b	1	b	1	b	1
Wednesday, June 17, 2009	b	1	b	1	b	1	b	1	b	1
Thursday, June 18, 2009	b	1	b	1	b	1	b	1	b	1
Friday, June 19, 2009	b	1	b	1	b	1	b	1	b	1
Saturday, June 20, 2009	b	1	b	1	b	1	b	1	b	1
Sunday, June 21, 2009	b	1	b	1	b	1	b	1	b	1
Monday, June 22, 2009	b	1	b	1	b	1	b	1	b	1
Tuesday, June 23, 2009	b	1	b	1	b	1	b	1	b	1
Wednesday, June 24, 2009	b	1	b	1	b	1	b	1	b	1
Thursday, June 25, 2009	b	1	b	1	b	1	b	1	b	1
Friday, June 26, 2009	b	1	b	1	b	1	b	1	b	1
Saturday, June 27, 2009	b	1	b	1	b	1	b	1	b	1
Sunday, June 28, 2009	b	1	b	1	b	1	b	1	b	1
Monday, June 29, 2009	b	1	b	1	b	1	b	1	b	1
Tuesday, June 30, 2009	b	1	b	1	b	1	b	1	b	1
Wednesday, July 1, 2009	b	1	b	1	b	1	b	1	b	1
Thursday, July 2, 2009	b	1	b	1	b	1	b	1	b	1
Friday, July 3, 2009	b	1	b	1	b	1	b	1	b	1
Saturday, July 4, 2009	b	1	b	1	b	1	b	1	b	1
Sunday, July 5, 2009	b	1	b	1	b	1	b	1	b	1
Monday, July 6, 2009	b	1	b	1	b	1	b	1	b	1
Tuesday, July 7, 2009	b	1	b	1	b	1	b	1	b	1
Wednesday, July 8, 2009	b	1	b	1	b	1	b	1	b	1
Thursday, July 9, 2009	b	1	b	1	b	1	b	1	b	1
Friday, July 10, 2009	b	1	b	1	b	1	b	1	b	1
Saturday, July 11, 2009	b	1	b	1	b	1	b	1	b	1
Sunday, July 12, 2009	b	1	b	1	b	1	b	1	b	1
Monday, July 13, 2009	b	1	b	1	b	1	b	1	b	1
Tuesday, July 14, 2009	b	1	b	1	b	1	b	1	b	1
Wednesday, July 15, 2009	b	1	b	1	b	1	b	1	b	1
Thursday, July 16, 2009	b	1	b	1	b	1	b	1	b	1
Friday, July 17, 2009	b	1	b	1	b	1	b	1	b	1
Saturday, July 18, 2009	b	1	b	1	b	1	b	1	b	1
Sunday, July 19, 2009	b	1	b	1	b	1	b	1	b	1
Monday, July 20, 2009	b	1	b	1	b	1	b	1	b	1
Tuesday, July 21, 2009	b	1	b	1	b	1	b	1	b	1
Wednesday, July 22, 2009	b	1	b	1	b	1	b	1	b	1
Thursday, July 23, 2009	b	1	b	1	b	1	b	1	b	1
Friday, July 24, 2009	b	1	b	1	b	1	b	1	b	1
Saturday, July 25, 2009	b	1	b	1	b	1	b	1	b	1
Sunday, July 26, 2009	b	1	b	1	b	1	b	1	b	1
Monday, July 27, 2009	b	1	b	1	b	1	b	1	b	1
Tuesday, July 28, 2009	b	1	b	1	b	1	b	1	b	1
Wednesday, July 29, 2009	b	1	b	1	b	1	b	1	b	1
Thursday, July 30, 2009	b	1	b	1	b	1	b	1	b	1
Friday, July 31, 2009	b	1	b	1	b	1	b	1	b	1
Saturday, August 1, 2009	b	1	b	1	b	1	b	1	b	1
Sunday, August 2, 2009	b	1	b	1	b	1	b	1	b	1
Monday, August 3, 2009	b	1	b	1	b	1	b	1	b	1
Tuesday, August 4, 2009	b	1	b	1	b	1	b	1	b	1
Wednesday, August 5, 2009	b	1	b	1	b	1	b	1	b	1
Thursday, August 6, 2009	b	1	b	1	b	1	b	1	b	1
Friday, August 7, 2009	b	1	b	1	b	1	b	1	b	1
Saturday, August 8, 2009	b	1	b	1	b	1	b	1	b	1
Sunday, August 9, 2009	b	1	b	1	b	1	b	1	b	1
Monday, August 10, 2009	b	1	b	1	b	1	b	1	b	1
Tuesday, August 11, 2009	b	1	b	1	b	1	b	1	b	1
Wednesday, August 12, 2009	b	1	b	1	b	1	b	1	b	1
Thursday, August 13, 2009	b	1	b	1	b	1	b	1	b	1
Friday, August 14, 2009	b	1	b	1	b	1	b	1	b	1
Saturday, August 15, 2009	b	1	b	1	b	1	b	1	b	1
Sunday, August 16, 2009	b	1	b	1	b	1	b	1	b	1
Monday, August 17, 2009	b	1	b	1	b	1	b	1	b	1
Tuesday, August 18, 2009	b	1	b	1	b	1	b	1	b	1
Wednesday, August 19, 2009	b	1	b	1	b	1	b	1	b	1
Thursday, August 20, 2009	b	1	b	1	b	1	b	1	b	1
Friday, August 21, 2009	b	1	b	1	b	1	b	1	b	1
Saturday, August 22, 2009	b	1	b	1	b	1	b	1	b	1
Sunday, August 23, 2009	b	1	b	1	b	1	b	1	b	1
Monday, August 24, 2009	b	1	b	1	b	1	b	1	b	1
Tuesday, August 25, 2009	b	1	b	1	b	1	b	1	b	1
Wednesday, August 26, 2009	b	1	b	1	b	1	b	1	b	1
Thursday, August 27, 2009	b	1	b	1	b	1	b	1	b	1
Friday, August 28, 2009	b	1	b	1	b	1	b	1	b	1
Saturday, August 29, 2009	b	1	b	1	b	1	b	1	b	1
Sunday, August 30, 2009	b	1	b	1	b	1	b	1	b	1
Monday, August 31, 2009	b	1	b	1	b	1	b	1	b	1
Tuesday, September 1, 2009	b	1	b	1	b	1	b	1	b	1
Wednesday, September 2, 2009	b	1	b	1	b	1	b	1	b	1
Thursday, September 3, 2009	b	1	b	1	b	1	b	1	b	1
Friday, September 4, 2009	b	1	b	1	b	1	b	1	b	1
Saturday, September 5, 2009	b	1	b	1	b	1	b	1	b	1
Sunday, September 6, 2009	b	1	b	1	b	1	b	1	b	1
Monday, September 7, 2009	b	1	b	1	b	1	b	1	b	1
Tuesday, September 8, 2009	b	1	b	1	b	1	b	1	b	1
Wednesday, September 9, 2009	b	1	b	1	b	1	b	1	b	1
Thursday, September 10, 2009	b	1	b	1	b	1	b	1	b	1
Friday, September 11, 2009	b	1	b	1	b	1	b	1	b	1
Saturday, September 12, 2009	b	1	b	1	b	1	b	1	b	1
Sunday, September 13, 2009	b	1	b	1	b	1	b	1	b	1
Monday, September 14, 2009	b	1	b	1	b	1	b	1	b	1
Tuesday, September 15, 2009	b	1	b	1	b	1	b	1	b	1
Wednesday, September 16, 2009	b	1	b	1	b	1	b	1	b	1
Thursday, September 17, 2009	b	1	b	1	b	1	b	1	b	1
Friday, September 18, 2009	b	1	b	1	b	1	b	1	b	1
Saturday, September 19, 2009	b	1	b	1	b	1	b	1	b	1
Sunday, September 20, 2009	b	1	b	1	b	1	b	1	b	1
Monday, September 21, 2009	b	1	b	1	b	1	b	1	b	1
Tuesday, September 22, 2009	b	1	b	1	b	1	b	1	b	1
Wednesday, September 23, 2009	b	1	b	1	b	1	b	1	b	1

Date	STATUS: REQUIRING REPORT BETWEEN 07:00 AND 19:00		STATUS: REQUIRING REPORT BETWEEN 19:00 AND 07:00		STATUS: REQUIRING REPORT BETWEEN 07:00 AND 19:00		STATUS: REQUIRING REPORT BETWEEN 19:00 AND 07:00	
	WORKING DAY	HOW EARLY IN DAY						
Thursday, September 24, 2009	b	b	b	b	b	b	b	b
Friday, September 25, 2009	b	b	b	b	b	b	b	b
Saturday, September 26, 2009	b	b	b	b	b	b	b	b
Sunday, September 27, 2009	b	b	b	b	b	b	b	b
Monday, September 28, 2009	b	b	b	b	b	b	b	b
Tuesday, September 29, 2009	b	b	b	b	b	b	b	b
Wednesday, September 30, 2009	b	b	b	b	b	b	b	b
Thursday, September 31, 2009	b	b	b	b	b	b	b	b
Friday, October 02, 2009	b	b	b	b	b	b	b	b
Saturday, October 03, 2009	b	b	b	b	b	b	b	b
Sunday, October 04, 2009	b	b	b	b	b	b	b	b
Monday, October 05, 2009	b	b	b	b	b	b	b	b
Tuesday, October 06, 2009	b	b	b	b	b	b	b	b
Wednesday, October 07, 2009	b	b	b	b	b	b	b	b
Thursday, October 08, 2009	b	b	b	b	b	b	b	b
Friday, October 09, 2009	b	b	b	b	b	b	b	b
Saturday, October 10, 2009	b	b	b	b	b	b	b	b
Sunday, October 11, 2009	b	b	b	b	b	b	b	b
Monday, October 12, 2009	b	b	b	b	b	b	b	b
Tuesday, October 13, 2009	b	b	b	b	b	b	b	b
Wednesday, October 14, 2009	b	b	b	b	b	b	b	b
Thursday, October 15, 2009	b	b	b	b	b	b	b	b
Friday, October 16, 2009	b	b	b	b	b	b	b	b
Saturday, October 17, 2009	b	b	b	b	b	b	b	b
Sunday, October 18, 2009	b	b	b	b	b	b	b	b
Monday, October 19, 2009	b	b	b	b	b	b	b	b
Tuesday, October 20, 2009	b	b	b	b	b	b	b	b
Wednesday, October 21, 2009	b	b	b	b	b	b	b	b
Thursday, October 22, 2009	b	b	b	b	b	b	b	b
Friday, October 23, 2009	b	b	b	b	b	b	b	b
Saturday, October 24, 2009	b	b	b	b	b	b	b	b
Sunday, October 25, 2009	b	b	b	b	b	b	b	b
Monday, October 26, 2009	b	b	b	b	b	b	b	b
Tuesday, October 27, 2009	b	b	b	b	b	b	b	b
Wednesday, October 28, 2009	b	b	b	b	b	b	b	b
Thursday, October 29, 2009	b	b	b	b	b	b	b	b
Friday, October 30, 2009	b	b	b	b	b	b	b	b
Saturday, November 01, 2009	b	b	b	b	b	b	b	b
Sunday, November 02, 2009	b	b	b	b	b	b	b	b
Monday, November 03, 2009	b	b	b	b	b	b	b	b
Tuesday, November 04, 2009	b	b	b	b	b	b	b	b
Wednesday, November 05, 2009	b	b	b	b	b	b	b	b
Thursday, November 06, 2009	b	b	b	b	b	b	b	b
Friday, November 07, 2009	b	b	b	b	b	b	b	b
Saturday, November 08, 2009	b	b	b	b	b	b	b	b
Sunday, November 09, 2009	b	b	b	b	b	b	b	b
Monday, November 10, 2009	b	b	b	b	b	b	b	b
Tuesday, November 11, 2009	b	b	b	b	b	b	b	b
Wednesday, November 12, 2009	b	b	b	b	b	b	b	b
Thursday, November 13, 2009	b	b	b	b	b	b	b	b
Friday, November 14, 2009	b	b	b	b	b	b	b	b
Saturday, November 15, 2009	b	b	b	b	b	b	b	b
Sunday, November 16, 2009	b	b	b	b	b	b	b	b
Monday, November 17, 2009	b	b	b	b	b	b	b	b
Tuesday, November 18, 2009	b	b	b	b	b	b	b	b
Wednesday, November 19, 2009	b	b	b	b	b	b	b	b
Thursday, November 20, 2009	b	b	b	b	b	b	b	b
Friday, November 21, 2009	b	b	b	b	b	b	b	b
Saturday, November 22, 2009	b	b	b	b	b	b	b	b
Sunday, November 23, 2009	b	b	b	b	b	b	b	b
Monday, November 24, 2009	b	b	b	b	b	b	b	b
Tuesday, November 25, 2009	b	b	b	b	b	b	b	b
Wednesday, November 26, 2009	b	b	b	b	b	b	b	b
Thursday, November 27, 2009	b	b	b	b	b	b	b	b
Friday, November 28, 2009	b	b	b	b	b	b	b	b
Saturday, November 29, 2009	b	b	b	b	b	b	b	b
Sunday, November 30, 2009	b	b	b	b	b	b	b	b
Monday, December 01, 2009	b	b	b	b	b	b	b	b
Tuesday, December 02, 2009	b	b	b	b	b	b	b	b
Wednesday, December 03, 2009	b	b	b	b	b	b	b	b
Thursday, December 04, 2009	b	b	b	b	b	b	b	b
Friday, December 05, 2009	b	b	b	b	b	b	b	b
Saturday, December 06, 2009	b	b	b	b	b	b	b	b
Sunday, December 07, 2009	b	b	b	b	b	b	b	b
Monday, December 08, 2009	b	b	b	b	b	b	b	b
Tuesday, December 09, 2009	b	b	b	b	b	b	b	b
Wednesday, December 10, 2009	b	b	b	b	b	b	b	b
Thursday, December 11, 2009	b	b	b	b	b	b	b	b
Friday, December 12, 2009	b	b	b	b	b	b	b	b
Saturday, December 13, 2009	b	b	b	b	b	b	b	b
Sunday, December 14, 2009	b	b	b	b	b	b	b	b
Monday, December 15, 2009	b	b	b	b	b	b	b	b
Tuesday, December 16, 2009	b	b	b	b	b	b	b	b
Wednesday, December 17, 2009	b	b	b	b	b	b	b	b
Thursday, December 18, 2009	b	b	b	b	b	b	b	b
Friday, December 19, 2009	b	b	b	b	b	b	b	b
Saturday, December 20, 2009	b	b	b	b	b	b	b	b
Sunday, December 21, 2009	b	b	b	b	b	b	b	b
Monday, December 22, 2009	b	b	b	b	b	b	b	b
Tuesday, December 23, 2009	b	b	b	b	b	b	b	b
Wednesday, December 24, 2009	b	b	b	b	b	b	b	b
Thursday, December 25, 2009	b	b	b	b	b	b	b	b
Friday, December 26, 2009	b	b	b	b	b	b	b	b
Saturday, December 27, 2009	b	b	b	b	b	b	b	b
Sunday, December 28, 2009	b	b	b	b	b	b	b	b
Monday, December 29, 2009	b	b	b	b	b	b	b	b
Tuesday, December 30, 2009	b	b	b	b	b	b	b	b
Wednesday, December 31, 2009	b	b	b	b	b	b	b	b
Thursday, January 01, 2010	b	b	b	b	b	b	b	b
Friday, January 02, 2010	b	b	b	b	b	b	b	b
Saturday, January 03, 2010	b	b	b	b	b	b	b	b
Sunday, January 04, 2010	b	b	b	b	b	b	b	b
Monday, January 05, 2010	b	b	b	b	b	b	b	b

Date	15% Markup on Full Invoice Charge		SF All Resource Project between use of		Administering Resource from		SF All Resource from Project Resource		SF All Resource from Investment from this SF	
	New Work	Revised	Resource	Resource	Resource	Resource	Resource	Resource	Resource	Resource
Tuesday, January 06, 2009										
Wednesday, January 07, 2009										
Thursday, January 08, 2009										
Friday, January 09, 2009										
Saturday, January 10, 2009										
Sunday, January 11, 2009										
Monday, January 12, 2009										
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Thursday, January 15, 2009										
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Monday, March 02, 2009										
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Wednesday, March 04, 2009										
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Sunday, March 08, 2009										
Monday, March 09, 2009										
Tuesday, March 10, 2009										
Wednesday, March 11, 2009										
Thursday, March 12, 2009										
Friday, March 13, 2009										
Saturday, March 14, 2009										
Sunday, March 15, 2009										

Date	15% Maximum DLI Increase			SR 114 Reporting Project between use of		Administrative Reporting from		SR 114 Reporting from Impact Report		SR 114 Reporting from	
	Various Locations	New Bulk installed capacity	Removal of Bulk Capacity	SR 114 Reporting	SR 114 Reporting	SR 114 Reporting	SR 114 Reporting	SR 114 Reporting	SR 114 Reporting	SR 114 Reporting	SR 114 Reporting
Tuesday, 06/02/2009											
Wednesday, 06/03/2009											
Thursday, 06/04/2009											
Friday, 06/05/2009											
Saturday, 06/06/2009											
Sunday, 06/07/2009											
Monday, 06/08/2009											
Tuesday, 06/09/2009											
Wednesday, 06/10/2009											
Thursday, 06/11/2009											
Friday, 06/12/2009											
Saturday, 06/13/2009											
Sunday, 06/14/2009											
Monday, 06/15/2009											
Tuesday, 06/16/2009											
Wednesday, 06/17/2009											
Thursday, 06/18/2009											
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Saturday, 06/20/2009											
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Wednesday, 09/30/2009											
Thursday, 10/01/2009											
Friday, 10/02/2009											
Saturday, 10/03/2009											
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Monday, 10/12/2009											
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Saturday, 10/17/2009											
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Wednesday, 10/21/2009											
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Saturday, 10/24/2009											
Sunday, 10/25/2009											
Monday, 10/26/2009											
Tuesday, 10/27/2009											
Wednesday, 10/28/2009											
Thursday, 10/29/2009											

Date	US 17 (2000) Road to Lake Ashboro		US 17 (2000) between US 228 and US 17 (2000)		US 17 (2000) north of US 228		US 17 (2000) south of US 228		Blacks Creek Bridge improvement on SR 211 in (2000)		Revised Bridge Resurfacing Project	
	US 17 NE	US 17 SE	US 17 NE	US 17 SE	195 HR	195 SR	SR 211 NE	SR 211 SE	HR	SR		
Saturday, June 13, 2009	b	b	b	b							4	4
Sunday, June 14, 2009	b	b	b	b							4	4
Monday, June 15, 2009	b	b	b	b							4	4
Tuesday, June 16, 2009	b	b	b	b							4	4
Wednesday, June 17, 2009	b	b	b	b							4	4
Thursday, June 18, 2009	b	b	b	b							4	4
Friday, June 19, 2009	b	b	b	b							4	4
Saturday, June 20, 2009	b	b	b	b							4	4
Sunday, June 21, 2009	b	b	b	b							4	4
Monday, June 22, 2009	b	b	b	b							4	4
Tuesday, June 23, 2009	b	b	b	b							4	4
Wednesday, June 24, 2009	b	b	b	b							4	4
Thursday, June 25, 2009	b	b	b	b							4	4
Friday, June 26, 2009	b	b	b	b							4	4
Saturday, June 27, 2009	b	b	b	b							4	4
Sunday, June 28, 2009	b	b	b	b							4	4
Monday, June 29, 2009	b	b	b	b							4	4
Tuesday, June 30, 2009	b	b	b	b							4	4
Wednesday, July 1, 2009	b	b	b	b							4	4
Thursday, July 2, 2009	b	b	b	b							4	4
Friday, July 3, 2009	b	b	b	b							4	4
Saturday, July 4, 2009	b	b	b	b							4	4
Sunday, July 5, 2009	b	b	b	b							4	4
Monday, July 6, 2009	b	b	b	b							4	4
Tuesday, July 7, 2009	b	b	b	b							4	4
Wednesday, July 8, 2009	b	b	b	b							4	4
Thursday, July 9, 2009	b	b	b	b							4	4
Friday, July 10, 2009	b	b	b	b							4	4
Saturday, July 11, 2009	b	b	b	b							4	4
Sunday, July 12, 2009	b	b	b	b							4	4
Monday, July 13, 2009	b	b	b	b							4	4
Tuesday, July 14, 2009	b	b	b	b							4	4
Wednesday, July 15, 2009	b	b	b	b							4	4
Thursday, July 16, 2009	b	b	b	b							4	4
Friday, July 17, 2009	b	b	b	b							4	4
Saturday, July 18, 2009	b	b	b	b							4	4
Sunday, July 19, 2009	b	b	b	b							4	4
Monday, July 20, 2009	b	b	b	b							4	4
Tuesday, July 21, 2009	b	b	b	b							4	4
Wednesday, July 22, 2009	b	b	b	b							4	4
Thursday, July 23, 2009	b	b	b	b							4	4
Friday, July 24, 2009	b	b	b	b							4	4
Saturday, July 25, 2009	b	b	b	b							4	4
Sunday, July 26, 2009	b	b	b	b							4	4
Monday, July 27, 2009	b	b	b	b							4	4
Tuesday, July 28, 2009	b	b	b	b							4	4
Wednesday, July 29, 2009	b	b	b	b							4	4
Thursday, July 30, 2009	b	b	b	b							4	4
Friday, July 31, 2009	b	b	b	b							4	4
Saturday, August 1, 2009	b	b	b	b							4	4
Sunday, August 2, 2009	b	b	b	b							4	4
Monday, August 3, 2009	b	b	b	b							4	4
Tuesday, August 4, 2009	b	b	b	b							4	4
Wednesday, August 5, 2009	b	b	b	b							4	4
Thursday, August 6, 2009	b	b	b	b							4	4
Friday, August 7, 2009	b	b	b	b							4	4
Saturday, August 8, 2009	b	b	b	b							4	4
Sunday, August 9, 2009	b	b	b	b							4	4
Monday, August 10, 2009	b	b	b	b							4	4
Tuesday, August 11, 2009	b	b	b	b							4	4
Wednesday, August 12, 2009	b	b	b	b							4	4
Thursday, August 13, 2009	b	b	b	b							4	4
Friday, August 14, 2009	b	b	b	b							4	4
Saturday, August 15, 2009	b	b	b	b							4	4
Sunday, August 16, 2009	b	b	b	b							4	4
Monday, August 17, 2009	b	b	b	b							4	4
Tuesday, August 18, 2009	b	b	b	b							4	4
Wednesday, August 19, 2009	b	b	b	b							4	4
Thursday, August 20, 2009	b	b	b	b							4	4
Friday, August 21, 2009	b	b	b	b							4	4
Saturday, August 22, 2009	b	b	b	b							4	4
Sunday, August 23, 2009	b	b	b	b							4	4
Monday, August 24, 2009	b	b	b	b							4	4
Tuesday, August 25, 2009	b	b	b	b							4	4
Wednesday, August 26, 2009	b	b	b	b							4	4
Thursday, August 27, 2009	b	b	b	b							4	4
Friday, August 28, 2009	b	b	b	b							4	4
Saturday, August 29, 2009	b	b	b	b							4	4
Sunday, August 30, 2009	b	b	b	b							4	4
Monday, September 1, 2009	b	b	b	b							4	4
Tuesday, September 2, 2009	b	b	b	b							4	4
Wednesday, September 3, 2009	b	b	b	b							4	4
Thursday, September 4, 2009	b	b	b	b							4	4
Friday, September 5, 2009	b	b	b	b							4	4
Saturday, September 6, 2009	b	b	b	b							4	4
Sunday, September 7, 2009	b	b	b	b							4	4
Monday, September 8, 2009	b	b	b	b							4	4
Tuesday, September 9, 2009	b	b	b	b							4	4
Wednesday, September 10, 2009	b	b	b	b							4	4
Thursday, September 11, 2009	b	b	b	b							4	4
Friday, September 12, 2009	b	b	b	b							4	4
Saturday, September 13, 2009	b	b	b	b							4	4
Sunday, September 14, 2009	b	b	b	b							4	4
Monday, September 15, 2009	b	b	b	b							4	4
Tuesday, September 16, 2009	b	b	b	b							4	4
Wednesday, September 17, 2009	b	b	b	b							4	4
Thursday, September 18, 2009	b	b	b	b							4	4
Friday, September 19, 2009	b	b	b	b							4	4
Saturday, September 20, 2009	b	b	b	b							4	4
Sunday, September 21, 2009	b	b	b	b							4	4
Monday, September 22, 2009	b	b	b	b							4	4
Tuesday, September 23, 2009	b	b	b	b							4	4

Date	US 17/2020SIA, used to file schedule		US 17/2020SIA, however CE 238 not in effect		195. Schedule, inspection, CE 218		194. Check time payment on CE 218		Forward to date, pending project	
	US 17/18	US 17/20	US 17/18	US 17/20	195 HR	195 SB	SR 11 HR	SR 11 SB	HR	SB
Thursday, September 24, 2009										
Friday, September 25, 2009										
Sunday, September 27, 2009										
Tuesday, September 29, 2009										
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Friday, October 2, 2009										
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Saturday, January 9, 2010										
Monday, January 11, 2010										

Date of Birth (DDMMYY)		Date of Birth (DDMMYY)		Date of Birth (DDMMYY)		Date of Birth (DDMMYY)		Date of Birth (DDMMYY)	
HR	SS	12118	12118	12118	12118	12118	12118	12118	12118
Sunday, June 13, 2009	33								
Sunday, June 14, 2009	33								
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Tuesday, Sep 22, 2009	33								
Wednesday, Sep 23, 2009	33								

Date	HR		SR		1-10 PAY APPROXIMATE PER STOCK AND SHARE				
	HR	SR	1-10	1-10	1-10	1-10	1-10	1-10	1-10
Thursday, September 24, 2009	1	1	0	0	0	0	0	0	0
Friday, September 25, 2009	1	1	0	0	0	0	0	0	0
Sunday, September 27, 2009	1	1	0	0	0	0	0	0	0
Tuesday, September 29, 2009	1	1	0	0	0	0	0	0	0
Wednesday, September 30, 2009	1	1	0	0	0	0	0	0	0
Friday, October 2, 2009	1	1	0	0	0	0	0	0	0
Saturday, October 3, 2009	1	1	0	0	0	0	0	0	0
Monday, October 5, 2009	1	1	0	0	0	0	0	0	0
Tuesday, October 6, 2009	1	1	0	0	0	0	0	0	0
Wednesday, October 7, 2009	1	1	0	0	0	0	0	0	0
Thursday, October 8, 2009	1	1	0	0	0	0	0	0	0
Friday, October 9, 2009	1	1	0	0	0	0	0	0	0
Saturday, October 10, 2009	1	1	0	0	0	0	0	0	0
Monday, October 12, 2009	1	1	0	0	0	0	0	0	0
Tuesday, October 13, 2009	1	1	0	0	0	0	0	0	0
Wednesday, October 14, 2009	1	1	0	0	0	0	0	0	0
Thursday, October 15, 2009	1	1	0	0	0	0	0	0	0
Friday, October 16, 2009	1	1	0	0	0	0	0	0	0
Saturday, October 17, 2009	1	1	0	0	0	0	0	0	0
Sunday, October 18, 2009	1	1	0	0	0	0	0	0	0
Monday, October 19, 2009	1	1	0	0	0	0	0	0	0
Tuesday, October 20, 2009	1	1	0	0	0	0	0	0	0
Wednesday, October 21, 2009	1	1	0	0	0	0	0	0	0
Thursday, October 22, 2009	1	1	0	0	0	0	0	0	0
Friday, October 23, 2009	1	1	0	0	0	0	0	0	0
Saturday, October 24, 2009	1	1	0	0	0	0	0	0	0
Monday, October 26, 2009	1	1	0	0	0	0	0	0	0
Tuesday, October 27, 2009	1	1	0	0	0	0	0	0	0
Wednesday, October 28, 2009	1	1	0	0	0	0	0	0	0
Thursday, October 29, 2009	1	1	0	0	0	0	0	0	0
Friday, October 30, 2009	1	1	0	0	0	0	0	0	0
Saturday, November 7, 2009	1	1	0	0	0	0	0	0	0
Sunday, November 8, 2009	1	1	0	0	0	0	0	0	0
Monday, November 9, 2009	1	1	0	0	0	0	0	0	0
Tuesday, November 10, 2009	1	1	0	0	0	0	0	0	0
Wednesday, November 11, 2009	1	1	0	0	0	0	0	0	0
Thursday, November 12, 2009	1	1	0	0	0	0	0	0	0
Friday, November 13, 2009	1	1	0	0	0	0	0	0	0
Saturday, November 14, 2009	1	1	0	0	0	0	0	0	0
Sunday, November 15, 2009	1	1	0	0	0	0	0	0	0
Monday, November 16, 2009	1	1	0	0	0	0	0	0	0
Tuesday, November 17, 2009	1	1	0	0	0	0	0	0	0
Wednesday, November 18, 2009	1	1	0	0	0	0	0	0	0
Thursday, November 19, 2009	1	1	0	0	0	0	0	0	0
Friday, November 20, 2009	1	1	0	0	0	0	0	0	0
Saturday, November 21, 2009	1	1	0	0	0	0	0	0	0
Sunday, November 22, 2009	1	1	0	0	0	0	0	0	0
Monday, November 23, 2009	1	1	0	0	0	0	0	0	0
Tuesday, November 24, 2009	1	1	0	0	0	0	0	0	0
Wednesday, November 25, 2009	1	1	0	0	0	0	0	0	0
Thursday, November 26, 2009	1	1	0	0	0	0	0	0	0
Friday, November 27, 2009	1	1	0	0	0	0	0	0	0
Saturday, November 28, 2009	1	1	0	0	0	0	0	0	0
Sunday, November 29, 2009	1	1	0	0	0	0	0	0	0
Monday, November 30, 2009	1	1	0	0	0	0	0	0	0
Tuesday, December 1, 2009	1	1	0	0	0	0	0	0	0
Wednesday, December 2, 2009	1	1	0	0	0	0	0	0	0
Thursday, December 3, 2009	1	1	0	0	0	0	0	0	0
Friday, December 4, 2009	1	1	0	0	0	0	0	0	0
Saturday, December 5, 2009	1	1	0	0	0	0	0	0	0
Sunday, December 6, 2009	1	1	0	0	0	0	0	0	0
Monday, December 7, 2009	1	1	0	0	0	0	0	0	0
Tuesday, December 8, 2009	1	1	0	0	0	0	0	0	0
Wednesday, December 9, 2009	1	1	0	0	0	0	0	0	0
Thursday, December 10, 2009	1	1	0	0	0	0	0	0	0
Friday, December 11, 2009	1	1	0	0	0	0	0	0	0
Saturday, December 12, 2009	1	1	0	0	0	0	0	0	0
Sunday, December 13, 2009	1	1	0	0	0	0	0	0	0
Monday, December 14, 2009	1	1	0	0	0	0	0	0	0
Tuesday, December 15, 2009	1	1	0	0	0	0	0	0	0
Wednesday, December 16, 2009	1	1	0	0	0	0	0	0	0
Thursday, December 17, 2009	1	1	0	0	0	0	0	0	0
Friday, December 18, 2009	1	1	0	0	0	0	0	0	0
Saturday, December 19, 2009	1	1	0	0	0	0	0	0	0
Sunday, December 20, 2009	1	1	0	0	0	0	0	0	0
Monday, December 21, 2009	1	1	0	0	0	0	0	0	0
Tuesday, December 22, 2009	1	1	0	0	0	0	0	0	0
Wednesday, December 23, 2009	1	1	0	0	0	0	0	0	0
Thursday, December 24, 2009	1	1	0	0	0	0	0	0	0
Friday, December 25, 2009	1	1	0	0	0	0	0	0	0
Saturday, December 26, 2009	1	1	0	0	0	0	0	0	0
Sunday, December 27, 2009	1	1	0	0	0	0	0	0	0
Monday, December 28, 2009	1	1	0	0	0	0	0	0	0
Tuesday, December 29, 2009	1	1	0	0	0	0	0	0	0
Wednesday, December 30, 2009	1	1	0	0	0	0	0	0	0
Thursday, December 31, 2009	1	1	0	0	0	0	0	0	0
Friday, January 1, 2010	1	1	0	0	0	0	0	0	0
Saturday, January 2, 2010	1	1	0	0	0	0	0	0	0
Sunday, January 3, 2010	1	1	0	0	0	0	0	0	0
Monday, January 4, 2010	1	1	0	0	0	0	0	0	0

